

ABSTRACT OF THE DISCLOSURE

Nucleic acid and protein sequences relating to a cation channel which is sperm-specific (CatSper1) are disclosed. The CatSper1 protein is shown to be specifically expressed in sperm and to be necessary for sperm motility. Nucleic acids, vectors, transformed cells, transgenic animals, polypeptides, and antibodies relating to the CatSper1 gene and protein are disclosed. Also provided are methods of *in vitro* fertilization and contraception, methods of identifying modulators of CatSper1 activity, methods of genotyping subjects with respect to CatSper1, and methods of diagnosing and treating CatSper1-mediated disorders, including infertility.